REMARKS

Status of the Application

Claims 1-20 are all the claims pending in the application. The specification is objected to

for various informalities. Claims 2-11 are objected to for various informalities. Claims 1-20

stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Tomoko Matsubara

(Development of high-speed processing algorithm for mass detection based on thresholding

technique in mammograms. Medical Imaging Technology Vol. 15 No. 1, January 1997

Research Paper, pages 1-13. IDS).

By this amendment, Applicants are hereby amending claims 1 and 2, and adding claims

21-26

Preliminary Matters

Applicants thank the Examiner for acknowledging Applicants' claim to priority and

receipt of the priority document.

Applicants further thank the Examiner for considering the references cited in the

Information Disclosure Statements filed April 27, 2004 and January 20, 2004, and

acknowledging acceptance of the drawings as filed on January 20, 2004.

Specification

The Examiner has objected to the specification for various informalities. The

informalities noted by the Examiner have been corrected. Thus, withdrawal of this objection is

respectfully requested.

Claim Objections

The Examiner objects to claims 2-11 for various informalities. The informalities noted by the Examiner have been corrected. Thus, withdrawal of this objection is respectfully requested.

Claim Rejections - 35 U.S.C. § 102

Claims 1-20 stand rejected under 35 U.S.C. § 102(b) as being unpatentable over Tomoko Matsubara (Development of high-speed processing algorithm for mass detection based on thresholding technique in mammograms. Medical Imaging Technology Vol. 15 No. 1, January 1997 Research Paper, pages 1-13. IDS).

Claim 1 recites, "a threshold value control means which stepwise sets a plurality of threshold values for binary-coding radiation image data of an object." The Examiner alleges that Matsubara teaches or suggests all of the elements of claim 1. Applicants respectfully disagree.

Matsubara discloses an algorithm for mass detection based on a thresholding technique in mammograms. As part of the mass detection, Matsubara teaches using binary-coding of an image to identify low density regions. A threshold is determined in order to perform the binary-coding of the image. Specifically, Matsubara teaches that a histogram is formed with the pixel value on the horizontal axis and pixel numbers on the vertical axis. The threshold value is determined by finding the pixel value at the center of the peak area (i.e. the average of: the pixel value at the start point of the peak area and the pixel value at the end point of the peak area).

Several embodiments of Matsubara binarize an image on a single determined threshold. To the extent Matsubara uses dual thresholds, the image is segmented into different regions, such

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as glandular and fatty regions. In such instance, a first threshold is used to binarize part of the image and a second threshold is used to binarize the other part of the image, thereby providing on a <u>single</u> binary image which is a composite of segments of <u>one</u> image. On the other hand, claim 1 recites a threshold value control means which stepwise sets a plurality of threshold values. Further binarization of the image based on each threshold produces <u>plural</u> binary images. Additionally, the threshold values in claim 1 are determined by initially setting the threshold value to a pixel value corresponding to a maximum value which the brightness of a pixel can take, and thereafter setting threshold values which are gradually reduced (i.e. stepwise) to the pixel value corresponding to the minimum value which the brightness of a pixel can take (see new claim 21, and claims 3 and 5). Matsubara cannot teach or suggest a threshold value control means which *stepwise* sets a plurality of threshold values and binarization to obtain multiple images. Therefore, claim 1 is patentable over the applied article.

Further, claim 1 recites, in part, "a primary-label region extracting means which attaches a primary label to an isolated region in each of the binary images and extracts the isolated regions attached with the primary label as primary-label regions". The Examiner cites to page 5, paragraph "1) Classification of Images" to page 6-7 for support. Applicants respectfully disagree.

The cited portions of Matsubara indicate that classification is made on a non-binary breast region image obtained by automatic extraction from an original image. The characteristic of the peak of a pixel value distribution of the image is analyzed using a threshold value to classify the image into one of three types. On the other hand, claim 1 recites that a primary label

is attached to an isolated region *in each of the binary images*. Thus, again, Matsubara fails to anticipate claim 1, and claim 1 is patentable over the applied art.

Claims 2-20 are patentable over the applied article, at least by virtue of their dependency from claim 1.
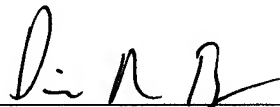
New Claims

Applicants hereby add claims 21-26. Claims 21-26 are dependent from claim 1, and are patentable at least by virtue of their dependency.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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CUSTOMER NUMBER

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